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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,984	06/20/2003	Kurt R. Carlson	NGC-140/000047-199	7137

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EXAMINER

ZEMEL, IRINA SOPJIA

ART UNIT	PAPER NUMBER
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1711

MAIL DATE	DELIVERY MODE
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07/11/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/600,984	Applicant(s) CARLSON ET AL.	
	Examiner Irina S. Zemel	Art Unit 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-74 is/are pending in the application.
- 4a) Of the above claim(s) 7-13 and 16-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 14, 15 and 21-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3 and 14-15,24, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by EO 752603 to W.L. Gore and Associates (hereinafter "W.L. Gore").

The rejection stands as per reasons of record.

As discussed in the previous office actions, W.L. Gore discloses a fiber core (pressure sensitive component) surrounded with foamed polymeric material 12. The reference further expressly discloses application of the foamed polymers in the form of tapes. Insofar as the newly added limitation relating to the void percentage of the foam, the reference expressly discloses that the porosity of the foamed material is at least about 10 %, thus expressly anticipating the claimed porosity. See page 3, lines 12-14. The foamed polymer is disclosed as having uniform distribution of small cells (or voids) through the polymeric material, see page 4, line 30 and the cell size of the As previously discussed, making the foamed polymeric material and encapsulating of closely surrounding of the pressure sensitive components with polymeric foam inherently meets the limitations of claims 1-3 and 14-15, 24, 25 and 27..

The invention as claimed, thus, is fully anticipated by the disclosure of the W.L. Gore reference.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-4, 15 and 21-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 660082 to Andrew A.G..

The disclosure of the Andrew A.G. reference is discussed in detail in the previous office actions. The reference discloses a method of surrounding fiber optic gyroscope with gel. The coil is made from epoxy resin (polymeric material) having filler dispersed within the gel. Among suitable fillers, hallow microballons are expressly disclosed throughout the specification, for example in column 8, line 32. Introduction of hallow filler into polymeric resin inherently introduces voids in the polymer.

The filler, which may be, as discussed above, hallow microballons, is introduced into the gel in the amounts of up to 40 %, thus including, and making obvious any amounts of below 40 %, which will inherently provide the void percentage corresponding to the claimed percentage. The reference further expressly discloses the effects of loading the gels with the hallow particles, such as reduction in density (paragraph bridging columns 7 and 8), modification of thermal coefficient of expansion of the gel loaded with particles, (column 8, lines 33-47), increasing the gel viscosity, increasing bulk modulus, etc., (columns 9-10). The reference further expressly discloses that increase in gel viscosity can be achieved with as low as 5 % of the filler. See, for example, column 1, first full paragraph). Thus, adding various amounts of microballons to the gels disclosed by Andrew A.G., including the amounts that would

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provide the void amounts corresponding to the claimed, thus would have been, if not anticipated by the expressed disclosure of 5%, clearly obvious from the disclosure of the reference to achieve specifically desired properties of the gels as the amounts of the microballons are expressly taught to be a result effective variable.

While the reference does not expressly address the distribution of the particles in the gel, it is reasonable believed that the particles are uniformly distributed in the gel as the uniform characteristics of the gels are desired and every property that is modified by adding the filler is discussed in the reference as having a "single" characteristic, without any gradient mentioned, thus also implying uniform dispersion of the filler. This is especially evident from the discussion of viscosity property modified by addition of the filler as this property will have a very considerable gradient should the filler be dispersed in non-uniform fashion. The size of the hallow particles is disclosed as low as 20 and even 1 microns, thus the voids inside the hallow particles of this size inherently correspond to the claimed diameter of the voids. Such voids are inherently smaller than the distance of separation between adjacent coils as per figures and the size of the disclosed voids.

The invention as claimed, thus, would have been obvious from the disclosure of the reference.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andrew A.G. in combination with US 5,706,175 to Takei.

The rejection stands as per reasons of record and the discussion above applicable to the newly introduce limitation of the base claim 1.

Claims 1-3 and 15, 24, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO99/36820 to SUN Microsystems Inc., (hereinafter "SUN") in combination with US Patent 4,107,354 to Wilkenloh et al., (hereinafter Wilkenloh") or W.L. Gore.

The disclosure of SUN reference is discussed in the previous office actions. While not specifically disclosing the porosity of the foams, the reference expressly discloses that commercial polyethylene (PE) or PTFE foams can be used in the invention. As discussed above, W.L. Gore discloses that PE foams with porosity as low as 10 % is acceptable for PE foams that are used for substantially similar dielectric applications. Also, it is notoriously known in the art of foams that number of properties of the foams is in direct dependency with the porosity of the foams (as evidence, for example, by Figure 1 of Wilkenloh), thus making varying the porosity (or pore volume) obvious for an ordinary artisan as result effective variable to achieve the desired properties of the final products. In addition, as shown on figures 1-3 of Sun, it appears that the claimed pore volume in the disclosed foamed materials inherently satisfies the claimed % of pores and the pores are substantially uniformly distributed in the polymer..

Response to Arguments

Applicant's arguments with respect to claims 1-6, 14-15 and 21-23 have been considered but are moot in view of the new ground(s) of rejection.

Insofar as the applicants arguments regarding the newly added limitation of base claim 1 relating to the foam porosity, this limitation is discussed in the rejections set forth above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina S. Zemel whose telephone number is (571)272-0577. The examiner can normally be reached on Monday-Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571)272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ISZ

Irina S. Zemel
Primary Examiner
Art Unit 1711
